

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

The Applicants wish to thank the Examiners for the courtesy shown to their attorneys during a telephone interview on May 7, 2010. The participants were Examiner Omar Ghowrwal, Douglas Agopsowicz, Reg. No. 56,792, and the undersigned. The following includes a summary of the substance of the interview.

During the interview, the discussion focused on the rejections of independent claims 1, 3 and 5 made in the Office Action mailed February 18, 2010. The prior art references (U.S. Printed Publication No. 2002/0136271 to Hiramatsu et al. and U.S. Printed Publication No. 2005/0083998 to Li et al.) were discussed.

With respect to claim 1, the Applicant's representatives argued that the rejection of claim 1 should be withdrawn for the following reasons.

First, the prior art does not disclose a base station apparatus which measures both channel quality of a control channel for transmitting control information and independently measures channel quality of the data channel itself. To clarify the technical distinction between claim 1 and the prior art references and claim 1, it was suggested that claim 1 be amended to add the feature that the channel quality of the control channel and the data channel are separately, i.e., independently, measured. Support for such an amendment can be found, for example, at par. [0042] of the specification. In contrast, as discussed during the Interview, paragraphs [0050] and [0051] of Hiramatsu disclose a base station apparatus 101 that selects a communication terminal apparatus based on MCS1 signals sent from the

communication terminal apparatuses, where the MCS1 signals are decided based on estimated reception quality of DSCH signals, and the estimated reception quality of the DSCH signals are estimated based on the reception quality of the CPICH signals. Thus, Hiramatsu does not disclose independently measuring the reception qualities of the DSCH and CPICH signals, as recited by claim 1.

Second, Hiramatsu's CPICH channel does not anticipate the control channel of claim 1. As discussed during the interview, the CPICH channel is a common known pilot signal transmitted to all communication terminal apparatuses in the area covered by the base station apparatus 11, whereas the control channel of claim 1 corresponds to an individual mobile station.

Third, one skilled in the art would not have been motivated to combine Li's control information into the CPICH channel of Hiramatsu. Based on common knowledge in the field, one of skill in the art would not find a technical reason or motivation to incorporate Li's control information, which indicates the OVSF code, modulation scheme and recipient terminal, into Hiramatsu's CPICH.

The Examiner indicated that he would need to conduct an additional prior art search to determine whether the prior art taught the feature of a base station apparatus which measures both channel quality of a control channel for transmitting control information and independently measures channel quality of the data channel itself.

With respect to claim 3, the Examiner and the Applicant's representatives discussed amending claim 3 to recite that "the selection section selects a number of mobile stations in high-to-low order," to indicate that the selection section selects more than one mobile station.

The Examiner indicated that such a feature did not appear to be taught by the prior art of record, but that another prior art search would be necessary before allowing amended claim 3.

With respect to claim 5, the Examiner and the Applicant's representatives discussed amending claim 5 to recite that the control channel is a "downlink individual ~~dedicated~~ channel." Support for this amendment is found, for example, at paragraph [0004] in the specification, which discloses "for both the downlink and uplink control channels in FIG.1, there are individual channels for each mobile station." This language was suggested both to overcome the 35 U.S.C. § 112, first paragraph rejection, and also to distinguish the shared control channels of the prior art. The Examiner indicated that another prior art search would be necessary to search for this feature.

Claims 1, 3 and 5 have been amended as discussed above. Additionally, independent claims 8 and 12 have been amended in substantially the same fashion as independent claim 1. Also, claims 2, 6, 7, and 9-11 have been amended to correct minor grammatical errors and to ensure proper antecedent support for each of the recited terms.

In addition to the arguments summarized above, a more detailed explanation as to why the amended claims are patentably distinct over the prior art is included below.

By way of review, according to aspects of the present invention, the channel quality of a data channel is measured in addition to the channel quality of a control channel for transmitting control information, thereby measuring more accurate data channel reception quality. In a CDMA system which Hiramatsu and Li are based upon, the data channel and the control channel have the same reception quality. On the other hand, in an OFDM system, which aspects of the present invention are based upon, reception quality varies between the data channel and the control channel, due to frequency selective fading. Consequently,

aspects of the present invention provide advantages that Hiramatsu and Li do not provide, by measuring the channel quality of a data channel in addition to independently measuring the reception quality of a control channel for transmitting control information, as recited by claim 1. Accordingly, the rejection of claim 1 should be withdrawn for at least this reason.

Furthermore, in the rejection, the Office Action proposes that the reception quality of CPICH according to Hiramatsu et al. (US2002/0136271, hereinafter “Hiramatsu”) anticipates the channel quality of the control channel recited by claim 1. However, as disclosed in Hiramatsu’s paragraph [0003], which reads “base station apparatus 11 sends a common known signal [...] using a common control channel (CPICH: Common Pilot CHannel),” Hiramatsu’s CPICH is described as a channel for transmitting common known signals, which is different from the control channel recited by claim 1. The control channel recited by claim 1 is a channel for transmitting control information including assignment information of a data channel or MCS information. Hiramatsu’s CPICH, on the other hand, is not used for transmitting assignment information of a data channel or MCS information.

Moreover, Hiramatsu's paragraph [0049] discloses that “a downlink DPCH is a channel for the base station apparatus to send a known signal, information indicating a communication terminal apparatus to which DSCH is sent.” Accordingly, with Hiramatsu, information designating a communication terminal to be the DSCH transmission destination, is transmitted through DPCH (Dedicated Physical CHannel). Thus, Hiramatsu’s DPCH more closely resembles a control channel. However, Hiramatsu does not disclose measuring the reception quality of this DPCH.

Li fails to cure these deficiencies of Hiramatsu. In the rejection, the Office Action cites Li et al. (US2005/0083998, hereinafter “Li”). Li’s paragraph [0039] discloses that:

“The HS-SCCHs carry control information for the HS-PDSCHs. The control information indicates the OVSF code, modulation scheme, and recipient terminal for each HS-PDSCH.”

However, Li does not disclose measuring the reception quality of this HS-SCCH.

Claim 1 recites the feature of “channel quality of a control channel for transmitting control information, which includes assignment information of a data channel or modulation and coding scheme (MCS) information.” Li fails to teach or suggest this feature.

Also, one skilled in the art would not have been motivated to combine Hiramatsu with Li in the manner proposed in the Office Action. “The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success (emphasis added).” MPEP 2143.02. In this case, based on common knowledge in the field, one of skill in the art would not find a technical reason or motivation to incorporate Li's control information, which indicates the OVSF code, modulation scheme and recipient terminal, into Hiramatsu's CPICH, which is a common known signal transmitted to all communication terminal apparatuses in range of the base station. One skilled in the art would not reasonably expect that inserting Li's control information (specific to each mobile device) into the CPICH pilot signal of Hiramatsu (general across a range of mobile devices) would yield successful results.

Furthermore, Hiramatsu discloses transmitting, through DPCH, a known signal and information indicating a communication terminal apparatus to which the DSCH is sent, which are equivalent to Li's control information. Thus, there is no motivation to incorporate Li's control information into the invention of Hiramatsu, because, even if Li's control information were incorporated into the invention of Hiramatsu, following the general knowledge in the field, a person of ordinary skill in the art would only find that Li's control information is

equivalent to the information transmitted by Hiramatsu's DPCH and that Li's control information would be incorporated only to be transmitted by Hiramatsu's DPCH – a redundant and inefficient result.

Moreover, Hiramatsu measures the reception quality of data by measuring CPICH, which is a known signal. However, if Li's control information were incorporated into the invention of Hiramatsu, Hiramatsu would measure the reception quality of control information, instead of measuring the reception quality of CPICH, which is a known signal. This does not necessarily provide accurate information about data reception quality and in fact is against the object of the invention of Hiramatsu or the problem Hiramatsu's invention is directed to solving.

With respect to claim 3, claim 3 has been amended to recite “[t]he base station apparatus according to claim 1, wherein the selection section selects a number of mobile stations in high-to-low order of the channel quality of the control channel.” In the rejection, the Office Action argues that the recited features of claim 3 are disclosed in Hiramatsu's paragraphs [0050], [0051] and [0086]. However, paragraph [0051] of Hiramatsu discloses:

“Base station apparatus 101 selects a communication terminal apparatus with a good downlink (that is, DSCH) situation and a good downlink service request (short delay time) from among all communication terminal apparatuses [...].”

and paragraph [0086] of Hiramatsu discloses:

“Allocation section 204 selects a communication terminal apparatus capable of sending a DSCH signal at the highest speed from among communication terminal apparatuses 1 to N [...].”

From this it obviously follows that Hiramatsu selects only one communication terminal apparatus, not a number of mobile stations, as recited by claim 3.

Accordingly, it is respectfully submitted that the rejection of claim 3 should be

withdrawn for at least these reasons.

With respect to claim 5, claim 5 has been amended to recite the feature that “the control channel ~~which~~ is a downlink individual ~~dedicated~~ channel.” Support for “individual channel” is found in paragraph [0004] in the specification, which discloses “for both the downlink and uplink control channels in FIG.1, there are individual channels for each mobile station.” This part of the specification expressly discloses that a control channel according to an aspect of the present invention is an individual channel.

According to Hiramatsu, CPICH is subject to reception quality measurement. Given the disclosure in paragraph [0003] of Hiramatsu, which reads “base station apparatus 11 sends a common known signal [...] using a common control channel (CPICH: Common Pilot CHannel),” Hiramatsu’s CPICH is a common channel, not an individual channel.

Furthermore, Li’s HS-SCCH is also a shared channel, given the disclosure in Li’s paragraph [0027] stating: “[t]he control information for the HS-PDSCHs is transmitted on one or more HS-SCCHs, which are shared control physical channels for the HS-DSCH.” Consequently, Li’s HS-SCCH is also different from the control channel recited by claim 5, which is an individual channel.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a personal communication, the examiner is requested to e-mail the undersigned at the address listed below to set up a telephone discussion.

Respectfully submitted,

/James Edward Ledbetter/

James E. Ledbetter
Registration No. 28,732

Date: May 18, 2010
JEL/DEA/att

Attorney Docket No. 007725-06205
Dickinson Wright PLLC
1875 Eye Street, NW, Suite 1200
Washington, DC 20006
Telephone: (202) 457-0160
Facsimile: (202) 659-1559
E-Mail: jledbetter@dickinsonwright.com
DC 9289-6205 154377